

AMENDMENT TO DRAWINGS

The sheets of drawings attached as part of the Appendix include changes to Figures 1 and 2. In accordance with the Examiner's suggestion, Figures 1 and 2 have been amended to include the legend "Prior Art."

REMARKS

Summary of the Amendment

Upon entry of the above amendment, the specification will have been amended and two Replacement Sheets will have been submitted for amended Figures 1 and 2. Claims 1 – 20 will remain pending. However, as the Examiner has withdrawn claims 14 – 20, directed to the non-elected invention, from further consideration, only claims 1 – 13 are currently under consideration by the Examiner.

Summary of the Official Action

In the instant Office Action, the Examiner has made the Restriction Requirement final and withdrawn claims 14 – 20 from consideration. Further, the Examiner has objected to the drawings and specification, rejected claims 4 based upon formal matters and rejected claims 1 – 13 over the art of record. By the present amendment and remarks, Applicants submit that the objections and rejections have been overcome, and respectfully request reconsideration of the outstanding Office Action and allowance of the present application.

Objection to Drawings is Moot

Applicants submit the objection to the drawings is moot in view of the submission of the attached Replacement Sheets, which amend original Figures 1 and 2. In particular, the amendments to Figures 1 and 2 add the legend “Prior Art,” as suggested by the Examiner in the pending Office Action.

Accordingly, entry of the Replacement Sheets and an indication these drawings are acceptable is respectfully requested.

Objection to Specification is Moot

By the present amendment, Applicants submit the objection to the specification is moot.

In particular, paragraph [Para 22] has been amended to correct an error of a typographical nature in the reference numeral for the protection layer.

Accordingly, Applicants request the Examiner consider the instant amendment and confirm the application is in proper form.

Traversal of Rejection Under 35 U.S.C. § 112, Second Paragraph

Applicants traverse the Examiner's rejection of claim 4 as being indefinite. The Examiner asserts presence of a process limitation in a product claim cannot impart patentability to the claim, such that this limitation is not given patentable weight.

Applicants initially note the Examiner has mischaracterized the recitation in claim 4 regarding a silicon oxide that has undergone a plasma nitridation process as a process step. Claim 4 clearly and unambiguously describes one of the materials for the gate dielectric of the remaining channels. While the recited material may be formed through a specific process, claim 4 merely recites the material in such specificity so that one ordinarily skilled in the art would readily understand the scope of claim 4 after reviewing the specification and claims.

Moreover, Applicants note, merely because a recitation is not entitled to patentable weight, this does not render that recitation indefinite under 35 U.S.C. § 112, second paragraph. As noted above, this is not the situation in the instant application because claim 4 recites a specific material, which is properly recited in an apparatus claim, such that the recitation is entitled to patentable weight and consideration by the Examiner.

Accordingly, reconsideration and withdrawal of the formal rejection under 35 U.S.C. § 112, second paragraph, and confirmation claim 4 is fully in compliance with the requirements of the statute is respectfully requested.

Traversal of Rejection Under 35 U.S.C. § 102(e)

Applicants traverse the rejection of claims 1 – 3, 5, and 8 – 12 under 35 U.S.C. § 102(e) as being anticipated by LIN et al. (U.S. Patent Application Publication No. 2004/0075122) [hereinafter “LIN”]. The Examiner asserts LIN shows each and every feature of the above-identified claims. Applicants traverse the Examiner’s assertions.

Applicants’ independent claim 1 recites, *inter alia*, a silicon on insulator layer having a plurality of channels, wherein *at least one channel* has a gate configuration that is *different than the remaining channels*. Further, Applicants’ independent claim 10 recites, *inter alia*, a stack comprising a silicon on insulator layer, *a silicon oxide insulation layer on the silicon on insulator layer, a dielectric layer on the silicon oxide insulation layer*, wherein the dielectric layer is a high-k dielectric material, and *a protection layer on the dielectric layer*. Applicants submit LIN fails to disclose at least the above-noted feature of the invention.

While describing formation of double and triple gate MOSFET devices, LIN fails to provide any disclosure regarding multiple channels, as recited in at least independent claim 1. In particular, LIN discloses, e.g., in paragraphs [0004], [0007] and [0030], unlike conventional finFET designs, each gate of the LIN finFET can independently control the fin channel. Thus, in contrast to the instant invention, LIN does not provide any disclosure of more than one channel, such that this document cannot even arguably disclose *at least one channel* has a gate configuration that is *different than the remaining channels*, as recited in at least independent claim 1.

Because LIN fails to disclose at least the above-noted feature of at least independent claim 1, Applicants submit this document fails to show each and every recited feature of the claims. Thus, Applicants submit the Examiner has failed to establish an adequate evidentiary

basis to support a rejection of independent claim 1 under 35 U.S.C. § 102(e), such that the rejection is improper and should be withdrawn.

With regard to independent claim 10, Applicants note, while LIN shows a silicon layer 220 formed on buried oxide layer 210, LIN discloses a gate oxide layer 230 on silicon layer 220, which can be a high-K dielectric material. On gate oxide layer 230, LIN provides a gate electrode 240 then a cover layer 250.

Applicants submit this arrangement of LIN is wholly distinct from the stack recited in at least independent claim 10. In particular, as the high-K dielectric (gate oxide) layer of LIN is formed on silicon layer 220, LIN fails to disclose a silicon oxide insulation layer on the silicon on insulator layer and a dielectric layer on the silicon oxide insulation layer, as recited in at least independent claim 10. Moreover, as a gate electrode of provided between the gate oxide layer and cover layer of LIN, this document fails to disclose a protection layer on the dielectric layer, as is also recited in at least independent claim 10.

Because LIN fails to disclose at least the above-noted feature of at least independent claim 10, Applicants submit this document fails to show each and every recited feature of the claims. Thus, Applicants submit the Examiner has failed to establish an adequate evidentiary basis to support a rejection of independent claim 10 under 35 U.S.C. § 102(e), such that the rejection is improper and should be withdrawn.

Further, Applicants submit that claims 2, 3, 5, 8, 9, 11, and 12 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicant submits that LIN fails to anticipate the invention recited in claims 2, 3, 5, 8, 9, 11, and 12.

Accordingly, Applicants request the Examiner reconsider and withdraw the rejections of

claim 1 – 3, 5, 8 – 12 and indicate these claims are allowable in the next official communication.

Traversal of Rejection Under 35 U.S.C. § 103(a)

Applicants traverse the rejection of claims 4, 6, 7, 11, and 12 under 35 U.S.C. § 103(a) as being unpatentable over LIN. While acknowledging LIN fails to show the gate dielectric of the remaining channels is a material comprising silicon dioxide, nitride dioxide, and silicon oxide that has undergone a plasma nitridation process, or the cover layer is metal or thin polysilicon, the Examiner asserts it would have been obvious to modify LIN to include these features. Applicants traverse the Examiner's assertions.

As discussed above, LIN fails to anticipate the invention recited in at least independent claims 1 and 10. Moreover, Applicants submit the art of record fails to provide any teaching or suggestion for modifying LIN in any manner that would render unpatentable the combination of features recited in at least independent claims 1 and 10.

In this regard, as LIN expressly discloses a single channel, Applicants submit LIN cannot even arguably suggest a modification that would include the multiple channel arrangement of at least independent claim 1. Moreover, as LIN expressly discloses a gate oxide layer between a silicon layer and a gate electrode layer, Applicants submit there is no arguable suggestion for modifying LIN that would render obvious the invention recited in at least independent claim 10.

Accordingly, Applicants submit no proper modification of LIN can render unpatentable the combination of features recited in at least independent claims 1 and 10, such that the combination of documents recited in the instant rejection would not render the instant invention obvious.

Further, Applicants submit that claims 4, 6, 7, 11, and 12 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite

additional features that further define the present invention. In particular, Applicant submits that LIN fails to anticipate the invention recited in claims 4, 6, 7, 11, and 12.

Accordingly, Applicants request the Examiner reconsider and withdraw the rejections of claim 4, 6, 7, 11, and 12 and indicate these claims are allowable in the next official communication.

Application is Allowable

Thus, Applicants respectfully submit that each and every pending claim of the present invention meets the requirements for patentability under 35 U.S.C. §§ 102 and 103, and respectfully request the Examiner to indicate allowance of each and every pending claim of the present invention.

Authorization to Charge Deposit Account

The undersigned authorizes the charging of any necessary fees, including any extensions of time fees required to place the application in condition for allowance by Examiner's Amendment, to Deposit Account No. 09 – 0458 in order to maintain pendency of this application.

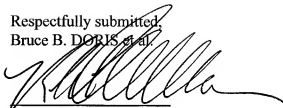
CONCLUSION

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipate or render obvious the Applicants' invention, as recited in each of claims 1 – 20. The applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be

appropriate.

Respectfully submitted,
Bruce B. DORIS et al.



Andrew M. Calderon
Reg. No. 38,093

Robert W. Mueller
Reg. No. 35,043

April 11, 2007
GREENBLUM & BERNSTEIN, P.L.C.
1950 Roland Clarke Place
Reston, VA 20191
(703) 716-1191